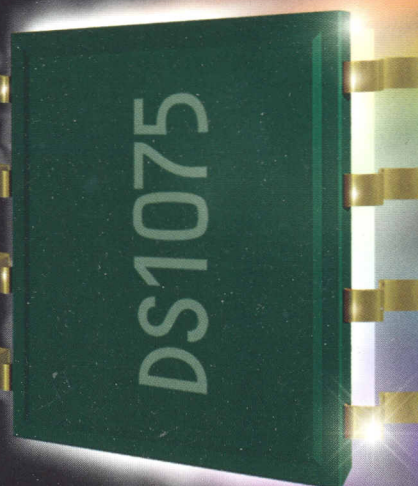


OPENING THE DOOR
TO DESIGN POSSIBILITIES

THE DS1075
ECONOSCILLATOR

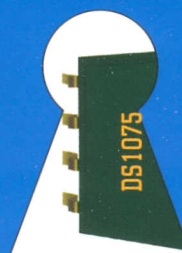


THE DS1075 ECONOSCILLATOR/DIVIDER

The process of electronics design is to place more and more function in less and less space while increasing flexibility, reliability and accuracy.

The DS1075 EconOscillator offers designers a programmable device with wide design flexibility that yields more functionality on the board.

Used as a practical replacement for bulky resonators and oscillators, the Dallas Semiconductor DS1075 is a single-chip oscillator which can be programmed to produce a set frequency between 200kHz and 100MHz. A programmable EEPROM divider and pre-scaler is used to produce the desired output frequencies. These values can be pre-programmed at the factory or user-configured. The chip maintains a 1% accuracy over the specified temperature and voltage ranges. No external components are required, so it saves board space for other functions.



FEATURES

- Two oscillator outputs
- Synchronous output enable
- Non-volatile user programmability

GENERAL APPLICATIONS

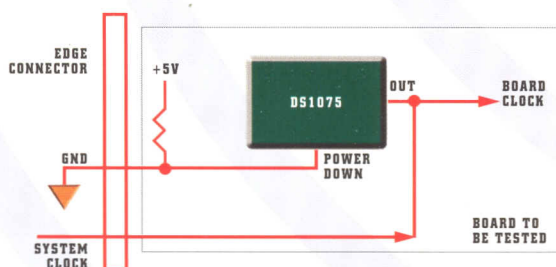
Consider the possibilities of a system clock that doesn't require external timing components, is accurate over the commercial temperature and voltage range, offers two available outputs, while reducing board space and cost. It's not only a possibility, it's real and available in a single chip—the DS1075 EconOscillator.

Would you like to replace a crystal oscillator to save space and parts cost? Would you like to have programmable output frequencies, two outputs and a variety of control options? Would you like to be able to add these options to a crystal-based oscillator? Then it's time to try a single-chip solution—the DS1075 EconOscillator.

Want a second, or back up system clock but want to keep it simple? Consider a chip that can use the existing system clock as reference, has the same accuracy as the primary source, can be programmed to produce sub-multiple output frequencies and is a low-cost single chip solution. We have a simple solution—the DS1075 EconOscillator.

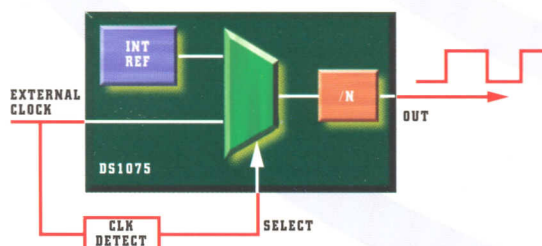
SPECIFIC APPLICATIONS

With its flexibility and features, the number of applications, both possible and practical, for the DS1075 is myriad. Two applications with wide appeal are detailed below to show the extensive range of use.



BOARD-LEVEL DIAGNOSTIC/TEST

Use the DS1075 to provide an onboard clock for board-level, standalone testing. When the board is inserted in a system, the clock can be automatically disabled for normal system operation.



"LIMP HOME" CLOCK

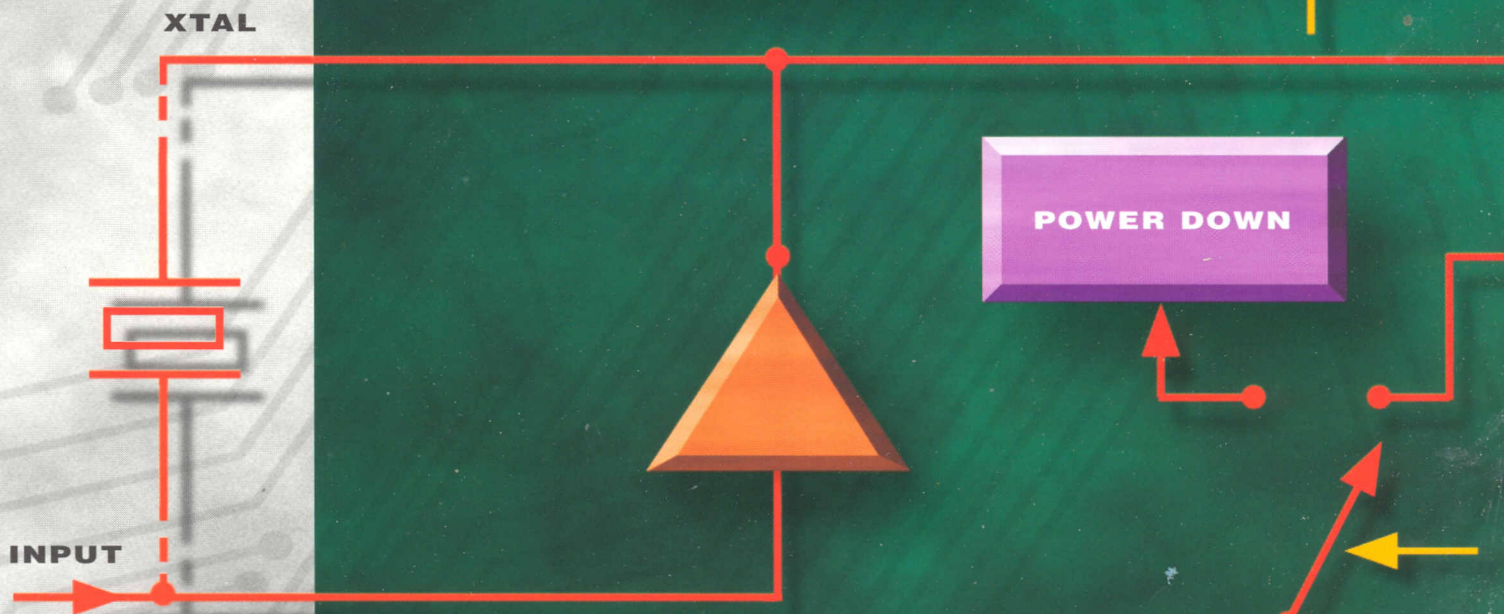
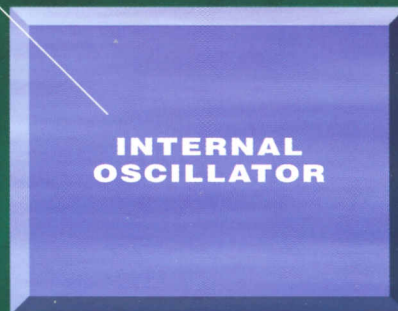
A back-up clock can be a smart addition to a design. The DS1075 is a single-chip solution that allows you to use an external clock when available, yet switch to an internal clock if the external source fails.

INTERNAL OSCILLATOR

Factory Programmed to 60,66, 80 or 100MHz.
Accurate to 1% over entire temp and voltage range.

PRESCALER

Value is set by program registers to divide internal oscillator signal by 1, 2, or 4.



OPTIONAL

EXTERNAL REFERENCE OPTIONS

Accommodates external clock input, crystal or ceramic resonator.

POWER DOWN

Use this pin to enter power down mode and external reference.

POWER DOWN SELECT



MULTIPLEXER

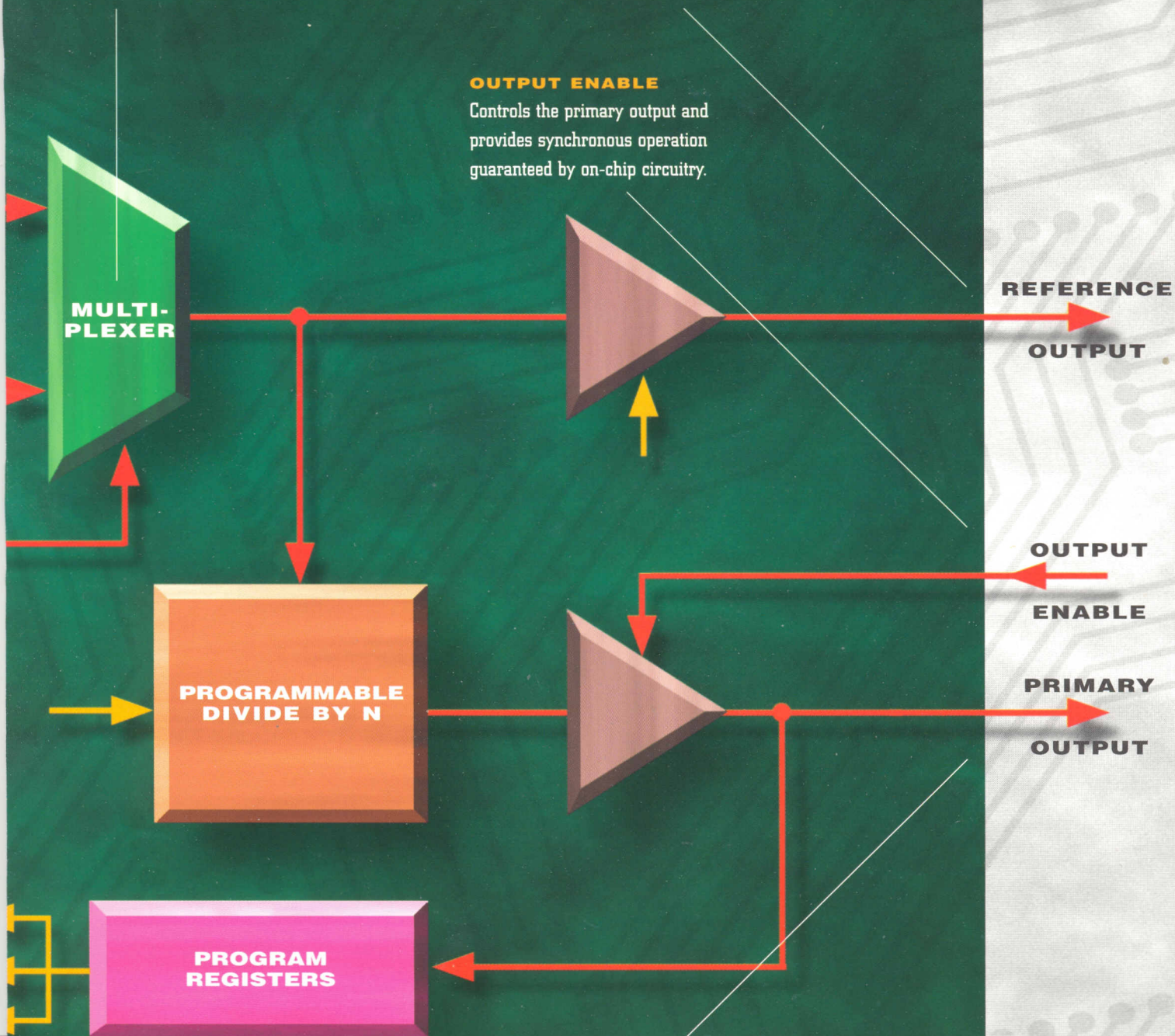
Allows choice between internal oscillator and external reference.

REFERENCE OUTPUT

Located ahead of programmable divider, may be disabled using program registers.

OUTPUT ENABLE

Controls the primary output and provides synchronous operation guaranteed by on-chip circuitry.



ECT

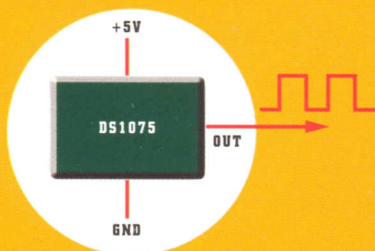
down mode or to switch between internal pin function is set by program registers.

PRIMARY OUTPUT

This is the output from the programmable divider. A dual purpose pin, in program mode, can be used to read or write the non-volatile program registers.

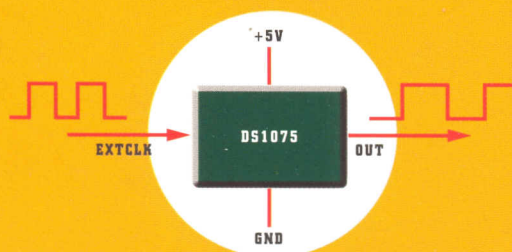
THE FLEXIBILITY OF TIMING CHOICES

The choice to use an internal or external timing reference, or switching between references is programmed via the on-chip EEPROM. The choice opens the door to new applications, and savings in device count and board space and increases the reliability of your device. The DS1075 opens the option of pin-selectable timing reference using the alternate function of the power down pin.



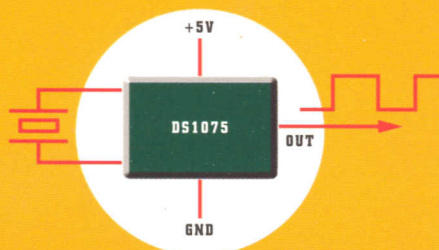
INTERNAL OSCILLATOR

Use the programmable on-board oscillator as the timing reference without any external timing components. The oscillator maintains 1% accuracy over the specified temperature and voltage range.



EXTERNAL REFERENCE

Direct a system clock to the DS1075 as the timing reference. The DS1075 can generate sub-multiples of this reference for frequencies up to 50MHz while retaining system reference accuracy.



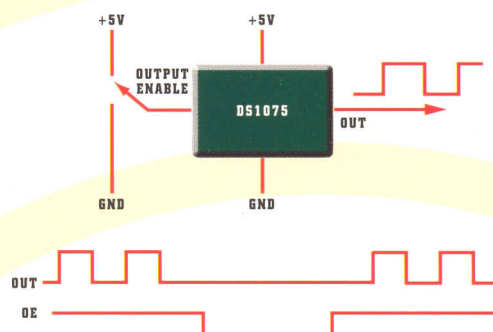
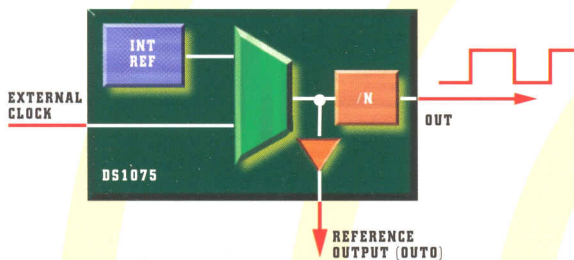
CRYSTAL REFERENCE

Crystals to generate signals up to 25MHz can be used to produce a stable reference. A buffered output at the reference frequency is also available if needed. These options allow the precision of a crystal with the easy generation of clock sub-multiples, and the flexible enabling and power down features of the DS1075.

THE FLEXIBILITY OF FUNCTION

SYNCHRONOUS OUTPUT ENABLE

You have the choice to control the output so that it will only be disabled (high impedance) when it is in a low state. This prevents any possibility of output pulse distortion, such as narrow output pulses, due to enable signal timing. And, when the output is enabled again, only "full" output pulses will be produced, regardless of the enable signal timing.



REFERENCE OUTPUT

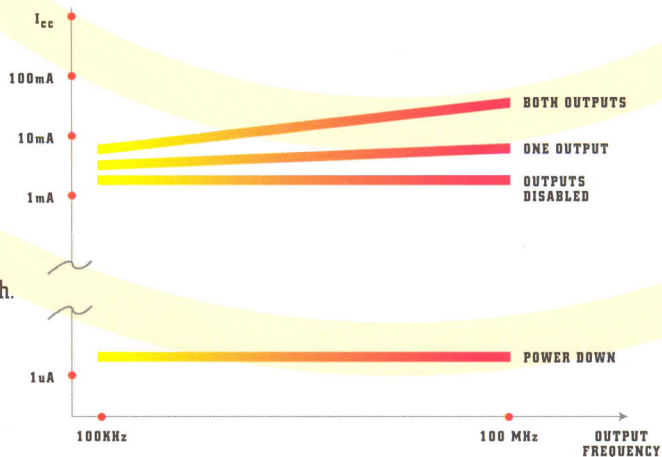
The reference output is tapped prior to the programmable divider for design flexibility. Run it as a multiple of the output frequency, or use the reference output as a buffered output of a crystal timing reference.

If your application doesn't demand it, the reference output can be disabled through the EEPROM.

THE POWER OF FUNCTIONALITY

POWER MANAGEMENT

Functions often come at the price of power. The DS1075 gives you the flexibility to manage the power consumption the way your design works best. With the ability to disable either or both the main output and the reference output, and a low power sleep mode, the DS1075 gives you function and flexibility at a power price you can live with.



PROGRAMMED WITH POSSIBILITIES

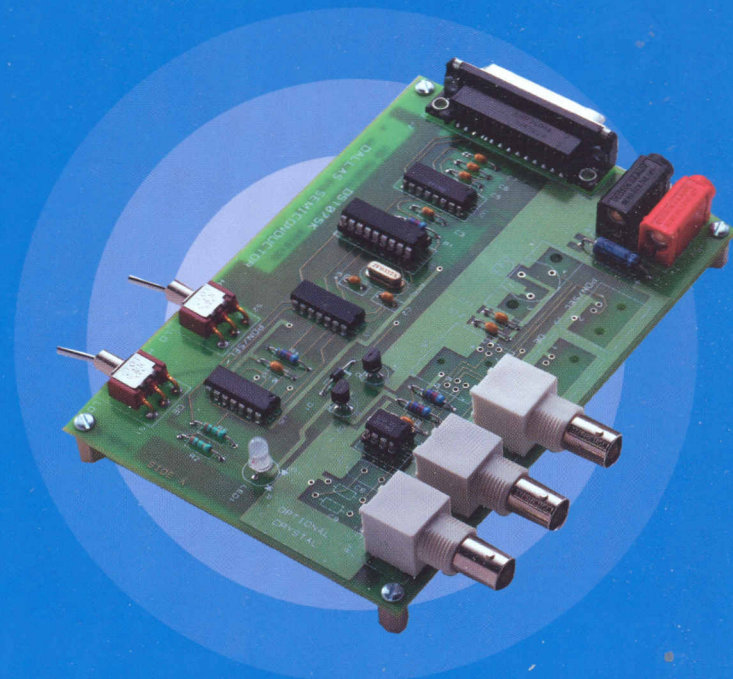
Whether you're breadboarding a new product, trying to improve an existing design or want the flexibility to fine tune as you prototype, the DS1075 understands the design process.

You have complete control over the value of the prescaler and programmable divider, the function of the power down/select pin, and you can enable or disable the reference output. Of course, you can also program your choice of an internal or external reference.

The DS1075 is user-programmed so you can make adjustments, and instant changes as you complete and test your designs. As your development calls for it, you can reprogram the part as many times as it takes to get the desired frequency in the design to match your idea.

A development kit allows you to program through a development board connected to a PC running Windows®95.

When you need production quantities, let the factory program to your specifications. The programming is done according to the proven Dallas one-wire protocol so you are assured each part is correct.



PACKAGING—THE CHOICE IS YOURS

Two standard package choices are available. An 8-pin DIP and an 8-pin narrow body (150mil) SOIC. For high volume, space-critical applications, inquire about 8-pin micro SOP availability.

4401 SOUTH BELTWOOD PARKWAY
DALLAS, TEXAS 75244-3292

FACTORY CONTACT (972) 371-3719
LITERATURE REQUEST (619) 224-3218

WEB SITE <http://www.dalsemi.com/>

